

Recent records of new and rare bird species in Costa Rica

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SUMMARY.—We report new data on distribution, colonisation and breeding of 17 species recently recorded in Costa Rica for the first time, such as Greater Shearwater *Puffinus gravis* and Savanna Hawk *Buteogallus meridionalis*, as well as information for nine other species with few previous records in Costa Rica, e.g. Green-winged Teal *Anas crecca*, Ocellated Poorwill *Nyctiphrynus ocellatus* and Chipping Sparrow *Spizella passerina*. The majority of new records involve species that have expanded their range north from Panama (11 species), due principally to deforestation.

Since the publication of Stiles & Skutch (1989), the distribution and abundance of some resident (Sandoval 2004, Sandoval & Ellis 2006) and migratory species has changed in Costa Rica (Garrigues & Dean 2007). For example, species such as Melodious Blackbird *Dives dives* have become common throughout the country (Sánchez *et al.* 1998). Furthermore, 19 species have been recorded for the first time, primarily from the Pacific south-west, the Caribbean coast, and on Cocos Island (Acevedo-Gutierrez 1994, Sánchez *et al.* 1998, Barrantes *et al.* 2002, Solano-Ugalde & Herrera 2005, Garrigues & Dean 2007, Obando *et al.* 2007a, 2008). Most recently recorded species inhabit open areas, forest edge or secondary forest (Sánchez *et al.* 1998, Garrigues & Dean 2007), all of which habitats have recently increased in Costa Rica due to deforestation (Roxero-Bixby *et al.* 2002, Barrantes & Lobo 2005, Joyce 2006). Here we provide information on distribution, colonisation and breeding of 17 species recently recorded in Costa Rica (including the country's territorial waters) for the first time (Fig. 1). We also provide new information for nine other species with few previous records for the country. Most data included here were obtained in 1997–2009, and photographs will be archived at the Unión de Ornitólogos de Costa Rica, San José. We also include data provided by other observers, whose full names are given in the Acknowledgements.



Figure 1. Map showing Costa Rica's provinces and borders.

Species accounts

GREEN-WINGED TEAL *Anas crecca*

The first and only previous record was in 1962 (Stiles & Skutch 1989). Five new records are as follows. An adult male was at Finca Las Concavas, Cartago (09°50'N, 83°53'W; 1,300 m) in late December 1999–early March 2000 (CS, JES & RG). It was with Blue-winged Teals *Anas discors* and Black-bellied Whistling Ducks *Dendrocygna autumnalis*. A male was in Palo Verde National Park, Guanacaste (10°20'N, 85°21'W; 25 m) on 12–16 February 2000 (JZ). Two males were at Lagunas Catfish Farms, near Comunidad, Guanacaste (10°32'N, 85°37'W; 40 m) on 15–29 February 2008 (JZ & CJ) with many other ducks. A female was seen there on 16 March 2008 (JH). A female was with six *A. discors* on a small pond at Cenizas de Pérez Zeledón, San José (09°18'N, 83°42'W; 750 m) on 1 March 2008 (JZ).

GREATER SHEARWATER *Puffinus gravis*

Although the bones of a shearwater found in Tortuguero, Limón, were considered to belong to a Greater Shearwater (Carr 1979), their identification has been questioned, and there are no confirmed Costa Rican records (Stiles & Skutch 1989, Obando *et al.* 2007a). On 22 June 2007 an exhausted male was found on the beach at Tortuguero, Limón (10°33'N, 83°30'W); it died the same day (Museo de Zoología, Universidad de Costa Rica; UCR 4156). To our knowledge, the closest records to Costa Rica are from Venezuela, where the species has been seen offshore in June and August (Hilty 2003), Trinidad & Tobago (Hayes & White 1999), and Quintana Roo, Mexico (Ash & Watson 1980). The date of the Costa Rican specimen coincides with the species' northbound migration (Harrison 1985), which in the Caribbean Basin seems to peak in early to mid June through the Lesser Antilles (Buckley *et al.* 2009).

AMERICAN WHITE PELICAN *Pelecanus erythrorhynchos*

Accidental in Costa Rica, with just two previous reports (Stiles & Skutch 1989, Garrigues & Dean 2007). A single was at the mouth of the río Parismina, Limón (10°18'N, 83°21'W; 1 m) on 5 January–19 February 1999 (JES). It was observed with Brown Pelicans *P. occidentalis* on a riverbank. A few days later, one was at Parque Vargas, in downtown Limón (09°59'N, 83°01'W; 2 m), close to the port (JES). We suspect that the same individual was involved in these two records, given their geographical proximity.

STRIATED HERON *Butorides striata*

The two previous records for Costa Rica involve a specimen taken in April 1923 at Cañas, Guanacaste (Stiles & Skutch 1989) and a sight record from Alajuela in 2005 (Obando *et al.* 2007b). The third record, and the first from the Pacific coast, was an adult photographed at the border of a rice field near mangrove at Esterillos, Parrita, Puntarenas (09°31'N, 84°28'W), on 2 March 2008 (WC).

SAVANNA HAWK *Buteogallus meridionalis*

We report the first records for Costa Rica. The first was observed on 15 April 2008, 5 km south of Zancudo, Puntarenas (08°29'N, 83°06'W; 5 m), perched on a fence at the edge of a rice field being ploughed (JOD). Subsequently, two adults and an immature were nearby, at La Cuesta, Puntarenas (08°28'N, 82°52'W; 60 m), on 24 February 2009 (SE) and 5 March 2009 (JZ), also in a rice field being ploughed. Common in open country west of Colón, Panama (CS pers. obs.), the species was expected in Costa Rica (Stiles & Skutch 1989) given its preference for open habitats, which are now widespread in the Pacific lowlands (Joyce 2006).

PEARL KITE *Gampsonyx swainsonii*

The first report in Costa Rica was on 30 November 1996 at La Trocha de Pérez Zeledón, San José (09°21'N, 83°40'W; 650 m). Most subsequent observations are from the south of the country, especially in the Pacific lowlands to 1,200 m. We report the first breeding records and the first sightings on the Caribbean coast. Breeding has been noted mainly in the southern Pacific lowlands, where at least four nests have been found at two localities. The first was at Talari Mountain Lodge, Perez Zeledón, San José (09°25'N, 83°40'W; 840 m), early in 2000 (PW). Another was at Bajo Coto, Buenos Aires, Puntarenas (08°57'N, 83°04'W; 313 m) in February 2005; it contained two chicks of unknown age (EB). In 2006, presumably the same pair built a nest c.50 m away; on 17 March it contained three fully feathered chicks. Another nest was observed on 19 March 2006 in Talari (CS), but its stage could not be determined. All nests were of sticks and small branches, were placed in partially leafless trees 18–20 m up in the canopy, and were similar to those described elsewhere (Thiollay 1994). All nests in Costa Rica have been on the Pacific slope during the dry season (December–April). The species has presumably dispersed north from Panama as far as Rincón de la Vieja and Palo Verde in Guanacaste. Since 2006, there have been three records on the Caribbean coast: singles near Sixaola, Limón, near the Panama border (09°33'N, 82°53'W; 50 m) on 4 January 2008 (LS), on the coast c.30 km south of Puerto Limón (09°47'N, 82°54'W; 2 m) on 1 December 2007 (FPM), and between Estero Negro and Puerto Viejo, Limón (09°47'N, 82°53'W; 2 m) on 31 January 2009 (DM).

CLAPPER RAIL *Rallus longirostris*

One observed in a mangrove by JES, on 16 June 1997, near the confluence of the ríos Bebedero and Tempisque, at the head of the Gulf of Nicoya, Guanacaste (10°15'N, 84°14'W; 21 m) was the first record for Costa Rica. Despite the lack of subsequent reports, Garrigues & Dean (2007) suggested that the species is resident in mangrove on the Gulf of Nicoya. The species' status and distribution in the tropics is poorly understood, and given the lack of further records, and the dispersal ability of rails, we cannot eliminate the possibility that this bird was a wandering individual.

SOUTHERN LAPWING *Vanellus chilensis*

Since the first record for Costa Rica, in 1993, along the río Sarapiquí (Sánchez *et al.* 1998), the species has increased throughout the country. On the Pacific slope it has reached north as far as Palo Verde National Park and its environs (Trama *et al.* 2006), and on the Caribbean slope as far north as Arenal (CS). Two were in the Central Valley, at Valle del Sol, San José (09°56'N, 84°12'W), on 2 October 2007 (LB), increasing its elevational range in the country to 850 m. Nesting has been observed at two sites at Los Lagos, Arenal (10°29'N, 84°43'W; 300 m), in consecutive years. The species continues to expand its range, mainly in humid lowland pastures (JZ).

LONG-BILLED CURLEW *Numenius americanus*

Three recent observations of this rare migrant (Stiles & Skutch 1989, Garrigues & Dean 2007). Singles were at Playa Azul, Garabito, Puntarenas (09°78'N, 84°64'W) on 26 February 2005 (DM), in a fallow rice field at Pelón de La Bajura, Guanacaste (10°26'N, 85°25'W; 20 m) on 19 November 2005 (JZ), and at Salinas Santos, Colorado de Abangares (10°10'N, 85°06'W; 5 m) on 10 September 2008 (FPM).

LARGE-BILLED TERN *Phaetusa simplex*

The first report was on 15 March 2003 at the río Tortuguero, Limón (Obando *et al.* 2007a,b, Garrigues & Dean 2007), while the second record involved one at Matina, Limón (10°06'N, 83°11'W; 2 m) on 13 June 2007 (DL), c.58 km south of the first. *P. simplex* inhabits freshwater habitats and is common throughout South America as far north as the Colombia / Panama border (Ridgely & Gwynne 1989). Vagrancy even further north is known, as there are two specimen records from Cuba, both from the north coast, one on an unknown date and the other taken on 28 May 1910 (Garrido & Kirkconnell 2000).

WHITE-CROWNED PIGEON *Patagioenas leucocephala*

Just one previous record, involving one seen in flight, on the Caribbean coast, at the mouth of the río Tortuguero, Limón, in March 1987 (Stiles & Skutch 1989). Garrigues & Dean (2007) mentioned subsequent records, but without dates or locations. JES observed one on 8 February 2005, also in Tortuguero (10°33'N, 83°30'W), feeding on *Miconia* sp. (Melastomataceae) fruits at the edge of a canal in mature secondary forest with Yolillo palms *Raphia taedigera* (Arecaceae). Further records from Costa Rica were considered likely, given that the species apparently ranges to mainland areas from its island breeding grounds in search of food (Stiles & Skutch 1989).

BROWN-THROATED PARAKEET *Aratinga pertinax*

First recorded in 1996 near the Panama border in the southern Pacific (Sánchez *et al.* 1998). Since then, its range has expanded through the disturbed lowlands west to La Gamba–Golfito (83°10'N, 08°43'W; 80 m) (Garrigues & Dean 2007). Further range expansion is evidenced by a flock at Palmar Sur (08°55'N, 83°27'W; 14 m) on 13 January 2006 (LS), the westernmost report in Costa Rica. The highest-elevation report involved a small flock at Sabalito de Coto Brus, Puntarenas (08°49'N, 82°55'W; 920 m) on 24 August 2002 (JZ). Although we are unaware of any breeding records, we expect that this parakeet nests in the country, because the population is resident and is quite common in the Pacific lowlands near the Panama border.

GREATER ANI *Crotophaga major*

First reported in Costa Rica in 2003–04 at Tortuguero (10°33'N, 83°30'W) (Garrigues & Dean 2007), during 2005 and January 2010 a single was observed (DL) on several occasions in forest edge vegetation along freshwater channels in Tortuguero, Limón, to Cuatro Esquinas Island (10°32'N, 83°30'W). The habitat is similar to that occupied by the species elsewhere (Hilty 2003). There is one previous record even further north, two birds collected in Tamaulipas, Mexico, in 1960 (Olson 1978).

NORTHERN POTOO *Nyctibius jamaicensis*

Considered uncommon in the Pacific dry forest (Garrigues & Dean 2007), although there are few data on the species' range and habitat preferences in Costa Rica (Barrantes *et al.* 2002, Obando *et al.* 2007a). There is a previous report of one at Santa Rosa National Park, Guanacaste (10°50'N, 85°37'W; 50 m), in April 2006 (Obando *et al.* 2007a). The easternmost record in Costa Rica involves a single observed at Punta Morales, Puntarenas (10°04'N, 84°57'W; 5 m), on 16 November 2008 (LS & EB), feeding on insects attracted to a light at the edge of a mangrove. Approximately one hour later, the bird was heard singing. On 2 December 2008, JES & JF observed a pair at the same locality. Our observations in north-west Costa Rica, and the Santa Rosa record, were in deciduous forest and adjacent mangrove.

OCELLATED POORWILL *Nyctiphrynus ocellatus*

Previously recorded only at Brasilia de Upala, Alajuela (Stiles & Skutch 1989), the species' current status in Costa Rica is considered uncertain (Garrigues & Dean 2007). On 13 February 2007 one was heard calling at Finca Las Crucitas, San Carlos, Alajuela (10°52'N, 84°19'W; 56 m), 86 km east of the first record (CS). The bird vocalised continually from 19.00 to 20.30 h next to a patch of partially logged forest, with tall trees (c.35 m) and a dense understorey, in an area where gold mining has reduced the forest to remnant patches. The night was clear with no moon. Next night, one was heard in the same area, at c.18.30 h, but it only called twice. The species' range in Central America is poorly known. For example, in northern and central Nicaragua it is rare and inhabits montane forest at 800–1,000 m (Martínez-Sánchez 2007), whilst in Honduras there is an isolated population (Anderson 2000) and in Panama there is just unconfirmed record from the Canal Zone (AOU 1998).

MOUSE-COLOURED TYRANNULET *Phaeomyias murina*

First recorded in Costa Rica in 1996, when one was mist-netted at La Trocha de Pérez Zeledón, San José (Sánchez *et al.* 1998). The northernmost observation on the Pacific coast was at Carara National Park, Puntarenas (09°46'N, 84°36'W; 34 m) on 13 December 2008 (LS). The first report on the Caribbean coast involved one at Comadre-Fila Carbon, Limón (09°42'N, 82°49'W; 20 m) on 22 January 2009 (DM). Direct evidence for breeding is lacking, but it presumably breeds in the San Vito Valley, where the species is apparently resident and increasing (JZ).

RUSTY-MARGINED FLYCATCHER *Myiozetetes cayanensis*

The first report was at La Gamba, Golfito, Puntarenas, on 7 April 2004 (MD; Garrigues 2004), while the second was at Tiskita Lodge, Pavones, Puntarenas (08°21'N, 83°08'W; 5 m), on 2 March 2005 (CS), perched beside an airstrip in second growth. On 26 March 2006, RG found a nest at La Gamba, Golfito, Puntarenas (83°10'N, 08°43'W, 80 m). The nest was typical of the genus, being a roofed structure constructed of grass fibres (Skutch 1976, Stiles & Skutch 1989). It was in a shrub, 1 m above a freshwater canal. The entrance was possibly at the bottom, as the nest did not appear to have a side entrance, and the nest tree was 3 m from a dirt road, in a pasture. The birds perched c.30 cm from the nest. The date and location above water are consistent with Dyrce's (2002) observations on Barro Colorado Island in Panama.

TROPICAL MOCKINGBIRD *Mimus gilvus*

The first report for Costa Rica was at Siquirres, Limón, in 2000 (JES). *M. gilvus* is now a resident breeder, with nesting recorded in several areas on both slopes (e.g. in downtown Limón (09°59'N, 83°01'W; 5 m), Siquirres (10°05'N, 83°30'W; 90 m) and La Fortuna de Arenal (10°28'N, 84°39'W; 250 m). Several have been observed in the Central Valley, including at Cartago, where two were seen in July–August 2004 (CS) visiting a feeder, consuming bananas. Also in this area, another adult was feeding a juvenile at Las Concavas (09°50'N, 83°53'W) on 29 October 2008 (JES, LS, DM). A report in El Rodeo-Coronado, San José (09°58'N, 84°00'W; 1,434 m), on 14 November 2006 (EB), and another in Oratorio-Oreamuno, Cartago (09°53'N, 83°49'W; 1,700 m), on 11 April 2009 (DM), are the highest-elevation records in Costa Rica. In Panama, the species has expanded its range since the 1930s (Ridgely & Gwynne 1989). To the north, the population has also been expanding rapidly south through Nicaragua (JZ pers. obs.). Thus, mockingbirds appear to be expanding their ranges from both the north and south in Central America. In addition, numbers in Costa

Rica have increased since their arrival. We predict that it will become common in residential and open areas of Costa Rica, as has occurred elsewhere (Cody 2005).

NASHVILLE WARBLER *Vermivora ruficapilla*

Recorded sporadically in the last 20 years (Stiles & Skutch 1989, Garrigues & Dean 2007), with two recent observations. The first was at Chomes, Puntarenas (10°02'N, 84°54'W; 5 m) on 21 September 2006 (LS, EB), where two birds foraged in a mangrove next to salt ponds. One was at Tirimbina Forest Reserve, Sarapiquí (10°23'N, 84°08'W; 187 m) on 13 and 22 February 2007 (JZ).

GOLDEN-CHEEKED WARBLER *Dendroica chrysoparia*

The first records in Costa Rica are as follows. A female in non-breeding plumage was in a shade-coffee plantation at Cerro Pata de Gallo, Palmares, Alajuela (10°02'N, 84°28'W; 1,450 m), on 2 September 2002 (JZ). Single females were observed in Coronado, San José (09°58'N, 84°00'W), at 1,434–1,800 m, on 9 and 16 September 2003 (EB). The first was a lone bird foraging in a pine (*Pinus* sp.) in a garden and the second was accompanying a mixed-species flock in an area of pastures, living fences, second-growth alders *Alnus acuminata* and remnants of natural vegetation. These are the southernmost reports for this globally threatened species, whose wintering grounds extend from the highlands of Chiapas, Mexico, to northern Nicaragua (AOU 1998).

CHIPPING SPARROW *Spizella passerina*

Previously known in Costa Rica from observations in San Pedro, San José, in September 1977 (Stiles & Skutch 1989) and at Cahuita, Limón, in November 2001 (Garrigues & Dean 2007). Two additional observations are as follows. One was at Coronado, San José, on 20 October 2001 (EB); it fed on a dirt road with three Rufous-collared Sparrows *Zonotrichia capensis*. One in breeding plumage was at Savegre, Cerro de la Muerte (09°33'N, 83°48'W; 2,320 m), in November 2008 (IA); it was perched 2 m high in a bush at the edge of secondary forest.

LARK SPARROW *Chondestes grammacus*

First observed in Costa Rica in the early 1990s at Carara National Park, Puntarenas, where the species was seen in December (CG), at a border between forest and extensive grassland. No further records until 2005, since when three observations have been made, all by JZ. The first was at Cenizas de Pérez Zeledón, San José, on 5 March 2005, perched atop a citrus tree within a new, mixed-species, reforestation plot (*Terminalia amazonia*, Combretaceae, and *Tabebuia* sp., Bignoniaceae). Another was at Chomes, Puntarenas (10°02'N, 84°54'W; 5 m) on 22 November 2006. The last was a single at La Angostura de Pérez Zeledón, San José (09°17'N, 83°41'W; 750 m), on 29 March 2007, perched briefly in the top of a 10-m *Tabebuia rosea* tree between a recently harvested sugarcane field and a shade-coffee plantation.

LINCOLN'S SPARROW *Melospiza lincolni*

A very rare migrant (Stiles & Skutch 1989, Garrigues & Dean 2007) for which three recent observations are available, all of singles: in a garden with isolated trees and bushes in Manzanillo, Limón (09°37'N, 82°39'W; 5 m), on 15 October 2005 (EB); near La Virgén del Socorro, Heredia (10°16'N, 84°10'W; 750 m), on 21 February 2006 (CS), foraging in a pasture next to secondary forest with four Yellow-faced Grassquits *Tiaris olivaceus*; and at Moravia de Chirripó, Turrialba (09°49'N, 83°26'W; 1,120 m), on 29 March 2008 (LS, GF).

SHINY COWBIRD *Molothrus bonariensis*

First observed in Costa Rica at Hone Creek, Talamanca, Limón, on 26 April 2004 (Martínez & Carman 2004). We report several observations from the Caribbean slope, and also present evidence of breeding. On 5 October 2005, DM observed three immature males (with contrasting rufous-brown flight feathers) near Hone Creek. On 16 June 2007, two males and two females were at Tuba Creek, Talamanca (DM). On 21 January 2007, also in Talamanca, DM saw six males foraging with Bronzed Cowbirds *M. aeneus* in pasture at Carbon I, Limón (09°40'N, 82°49'W). During March and May 2008 several were present in the Turrialba area. On 9 March, EC observed at least six at the Centro Agronómico Tropical de Investigación y Enseñanza (09°53'N, 83°39'W; 600 m), and on 29 March and 27 April, LS, EB & GF observed several males and females foraging with Bronzed Cowbirds at Moravia de Chirripó, which at 1,130 m is the highest elevation in Costa Rica to date. In May 2009, EB and the staff of La Selva Biological Station (Sarapiquí, Heredia, 10°25'N, 84°00'W; 35 m) observed a fledgling being fed by a pair of Band-backed Wrens *Campylorhynchus zonatus*, the first breeding record for the country.

CRESTED OROPENDOLA *Psarocolius decumanus*

The first observation in Costa Rica was in 1999, when it was found in the upper Coto Brus Valley (Garrigues & Dean 2007). Since then the species has apparently spread. In 2000, the first colony was found at San Bosco de Sabalito, Puntarenas (08°53'N, 82°55'W; 950 m), and later that year ten more colonies were found in the Coto Brus Valley, at Ciudad Neily and Coto Colorado (JZ). Subsequently, colonies have become commoner in Sabalito, Puntarenas. A colony with three nests was found in February 2006, between Río Claro and Palmar Sur, Puntarenas (08°43'N, 83°09'W; 80 m), in an isolated tree next to the Pan-American Highway (LS). Further, several individuals have been observed away from the Coto Brus Valley. The highest record is on Cerro Pitier, La Amistad International Park (09°01'N, 83°02'W; 1,300 m), on 18 March 2006 (LS). The westernmost record is at Bajo Coto, Puntarenas (08°57'N, 83°04'W; 313 m), where a male was seen in a small *Erythrina* (Papilionaceae) tree, on 17 March 2006 (LS). On 15 February 2007, LS saw one flying over the río Tigre on the Osa Peninsula (08°31'N, 83°24'W; 130 m). The establishment of new colonies and sightings of singles or small groups further west signal ongoing range expansion.

TRICOLOURED MUNIA *Lonchura malacca*

The first observation was at La Guinea, Guanacaste, in May 1999, where a population became established (Garrigues & Dean 2007). Significant range expansion has followed. On 16–23 February 2005, LS observed a group of c.500 adults and young in Pitaya, Miramar, Puntarenas (10°00'N, 84°48'W; 5 m). At the same location, on 15 January and 16 February 2006, LS observed a group of c.50, both adults and young, feeding in a rice field surrounded by sugarcane plantations. On 21 September 2006, at Chomes, Puntarenas, LS & EB observed two adults at the edge of mangrove. On 2 September 2008, JZ saw two adults in a rice field near Palmar Sur, Puntarenas (08°56'N, 83°27'W; 15 m), c.250 km from La Guinea. The species is associated with rice fields in Costa Rica, as it is elsewhere (Funes & Herrera 2005). Rice is grown extensively on the Pacific coast, presumably explaining the species' expansion.

Discussion

The species reported here can be subdivided into five groups according to geography and / or habitat: (1) coastal and pelagic species (one), (2) species that have expanded north from Panama (11), (3) North American vagrants (nine), (4) rediscovered species in the country (two), and (5) miscellaneous (four).

Coastal and pelagic species.—Ornithological observations in oceanic waters of Costa Rica are infrequent, making new records, such as that presented here, to be expected. Interestingly, two new species reported in Costa Rica, Greater Shearwater (see above) and Cory's Shearwater *Calonectris diomedea* (Solano-Ugalde & Herrera 2005), are from the Caribbean coast, which coastline is much shorter than the Pacific. The high diversity of seabirds in the eastern Pacific (Ballance *et al.* 2006) could still produce new records for Costa Rica. There has been a recent increase in efforts to search for pelagic species in this region, which has produced new records for Costa Rica such as Black-vented Shearwater *Puffinus opisthomelas* (B. Sullivan pers. comm.), Christmas Shearwater *P. nativitatis* (Brinkley 2008) and Manx Shearwater *P. puffinus* (Garrigues & Dean 2007).

Species from Panama.—Several recent additions to the Costa Rican avifauna are of species presumably spreading north from Panama, especially those that inhabit open or semi-open habitats, e.g. Brown-throated Parakeet, Rusty-margined Flycatcher and Crested Oropendola. Open habitats have increased in Costa Rica during the last 50 years, including on the southern Pacific slope near the Panama border (Barrantes & Lobo 2005, Joyce 2006).

North American vagrants.—Most observations of North American vagrants involve single individuals, which have presumably overshot their normal winter range, or reflect deteriorating conditions in wintering habitats further north.

Rediscovered species.—Both species are nocturnal and could have been overlooked previously. Northern Potoo is probably uncommon in dry forest and adjoining mangrove. Previous Costa Rican records of Ocellated Poorwill are from poorly surveyed areas (along the central border with Nicaragua), where more field work is needed.

Miscellaneous.—The three species (*Phaetusa simplex*, *Crotophaga major* and *Patagioenas leucocephala*) concerned were all seen on the Caribbean slope. These accidental records may all represent vagrants. Tricoloured Munia was introduced as a pet in Costa Rica (LS pers. obs.), and apparently some were released or escaped around Filadelfía, Guanacaste, where the first observation was made, although it has since increased its range along the Pacific coast.

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